

## ENERGY IN CRISIS?

The current economic crisis has hit us all much more quickly than we ever could have imagined. It is but a few months since we were talking about the end of the oil and gas boom and bust cycle that has been the norm over the past 30 years and Gazprom were predicting oil prices of US\$250 per barrel. How quickly things change. The price of oil has been slashed from a mid-2008 high of nearly US\$150/barrel to less than US\$40 but the oil and gas industry has yet to see the daily-reported swingeing cuts that have become common-place in other industries. Some oil and gas companies have begun delaying or cancelling previously planned projects and seismic vessel new-builds have been put on hold. However, the impact, to date, would appear to be minor inside the energy industry when measured against the world economic downturn.

World economic recession apart, the energy business has, however, been in crisis for some years now – a crisis of its own-making and one that has crept up on us. In the so-called “developed world” we have grown well-used to a ready supply of energy to power our homes and workplaces or to transport us freely around the globe. Unfettered consumption of energy has led to dangerous levels of carbon dioxide production and consequent global warming. And now the “developing world” has had a taste of the benefits of easy access to energy the demand for such resource will inevitably and understandably rise inexorably. The current economic crisis will flatten the energy consumption curve a little but the trend towards increased global energy consumption is unlikely to reverse.

The perfect storm is brewing in the world of energy. The ingredients comprise our near-total reliance on hydrocarbons (a finite and CO<sub>2</sub> producing resource), the security of supply of energy and the somewhat delayed search for economic alternative supplies of sustainable energy. Despite efforts to reduce our reliance on hydrocarbons, world production of energy in 2006 was as follows:

<b>Primary Energy Source</b>	<b>% World Energy Production 2006</b>	<b>% change 1996-2006</b>
1) Petroleum	36%	17%
2) Coal	28%	33%
3) Dry Natural Gas	23%	27%
4) Hydroelectric	6%	
5) Nuclear	6%	
6) Geothermal, solar, wind wood and waste	1%	
4) 5) & 6)		133%

*Source: Energy Information Administration (IEA) – USA*

It is obvious to all but a few, that we have to find alternative supplies of sustainable and carbon-free energy and we have to find them quickly. However, we are already way behind the “needs” curve. High oil prices in 2007/08 were seen by the majority as very bad news

resulting in high prices at the petrol pumps and in our electricity bills. Such high prices are, however, a necessary pre-cursor to alternative supplies of sustainable, carbon-free energy. Innovative technology will always, by necessity, be expensive and humans have a long history of “economic innovation” – i.e. we adopt new technologies when it is in our economic interest to do so. We are currently almost totally dependent on hydrocarbons for our energy supply and we have invested huge sums in the infrastructure to produce, transport and supply such energy. We ain’t going to change this in a rush unless there is an economic reason to do so – despite the dire consequences of continued global warming. Only when we begin to seriously cost-in the economic impacts of global warming into our energy price equation or prices for hydrocarbons go much higher will we begin to make significant progress in our pursuit of sustainable, carbon-free energy.

The switch to alternative sources of energy such as hydrogen, solar, wind, waves and tidal power will be a long-time coming without the necessary economic drivers or significant state intervention. In the meantime, we can look forward to an ever-tightening energy supply with consequent fuel shortages and inevitable future power cuts. Gas is an abundant and less CO<sub>2</sub> producing alternative to coal and oil and is an important transitional form of energy. However, there are inherent problems in transporting the product to market requiring costly pipelines infrastructure and attendant security threats to such supply. These are being partly overcome by LNG transportation.

So, what does all this mean to those earning a living in the energy industry that is currently dominated by hydrocarbons? Energy consumption will continue to rise and they ain’t making any more hydrocarbons – well not in the timescales of interest to us. Clean coal technology and CO<sub>2</sub> sequestration may provide a costly part-solution to the global-warming issue. The search for secure and sustainable energy supplies will remain a key global issue for the foreseeable future and the skills possessed by those working in the energy industry will be increasingly sought after. The current global economic crisis will inevitably impact us all but the need for our skills within energy is unlikely to diminish. The ageing demographics of those working within our industry will not help with the current energy crisis..... but that is another issue!

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